

Title (en)
INDUSTRIAL CONTROL SYSTEM WITH INTEGRATED CIRCUIT ELEMENTS PARTITIONED FOR FUNCTIONAL SAFETY AND EMPLOYING WATCHDOG TIMING CIRCUITS

Title (de)
INDUSTRIELLES STEUERUNGSSYSTEM MIT INTEGRIERTEN SCHALTELEMENTEN ZUR VERTEILTEN FUNKTIONALEN SICHERHEIT UND ZUR ANWENDUNG VON LAUFZEITÜBERWACHUNGSSCHALTUNGEN

Title (fr)
SYSTÈME DE COMMANDE INDUSTRIEL AVEC DES ÉLÉMENTS DE CIRCUIT INTÉGRÉ DIVISÉS POUR SÉCURITÉ FONCTIONNELLE ET UTILISANT DES CIRCUITS D'HORLOGE DE SURVEILLANCE

Publication
EP 3068052 A1 20160914 (EN)

Application
EP 16157340 A 20160225

Priority
US 201514644515 A 20150311

Abstract (en)
Safety and/or reliability may be improved in industrial control systems (10) by optimally utilizing integrated circuit elements to reduce the amount of components required and to provide cross monitoring. In one aspect, circuitry that is part of an Integrated Circuit for controlling a first channel (A) may also be used to monitor and provide safe operation for circuitry for controlling a second channel (B), and the circuitry for controlling the second channel (B) may similarly be used to monitor and provide safe operation for the circuitry controlling the first channel (A). Circuitry may include a windowed watchdog circuit (44) which may be used to monitor various events of the other circuitry, and safe operation may be provided by removing power from the other circuitry to provide a safe state.

IPC 8 full level
H03K 17/689 (2006.01); **G05B 19/042** (2006.01); **H03K 19/007** (2006.01); **H04L 25/02** (2006.01)

CPC (source: CN EP US)
G05B 19/04 (2013.01 - CN); **G05B 19/0428** (2013.01 - EP US); **G06F 1/28** (2013.01 - US); **H03K 17/689** (2013.01 - EP US); **G05B 19/0425** (2013.01 - EP US); **G05B 2219/24003** (2013.01 - EP US); **G05B 2219/24015** (2013.01 - EP US); **G05B 2219/25158** (2013.01 - EP US); **G05B 2219/34466** (2013.01 - EP US); **H01L 2224/16225** (2013.01 - EP); **H01L 2924/181** (2013.01 - EP); **H01L 2924/19107** (2013.01 - EP); **H03K 19/0075** (2013.01 - EP US); **H04L 25/0266** (2013.01 - EP US)

Citation (applicant)
US 7319406 B2 20080115 - VAZACH JOSEPH G [US], et al

Citation (search report)

- [XAI] US 2013055052 A1 20130228 - KAERIYAMA SHUNICHI [JP]
- [AD] US 7319406 B2 20080115 - VAZACH JOSEPH G [US], et al
- [A] EP 2595018 A2 20130522 - ROCKWELL AUTOMATION LTD [GB]

Cited by
EP4099567A1; US11940497B2

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3068052 A1 20160914; EP 3068052 B1 20200219; CN 105974827 A 20160928; CN 105974827 B 20180928; US 2016266564 A1 20160915; US 9651931 B2 20170516

DOCDB simple family (application)
EP 16157340 A 20160225; CN 201610141093 A 20160311; US 201514644515 A 20150311